

LEARNING DIMENSIONS IN THE CLASSROOM

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The purpose of this article is to analyse the learning process in the classroom under three different perspectives. In the first place, Vygotsky's sociocultural theory, which supports the social origin of the learning process; secondly, the unique and individual nature of the learning process defended by Rogers' humanistic psychology, which also points out emotional factors; and, lastly, Dewey's constructivist point of view, which defends the active role of the student in knowledge acquisition and in a progressive intellectual autonomy. After highlighting the essential interrelation between these three dimensions, it is suggested that the Cooperative Learning methodological approach is their best articulating and integrating framework. The social dimension is reflected in the way the students interact at different cognitive levels that improve their learning experience through debate and cooperation, developing superior cognitive strategies. Encouraging small group processes can lead to greater attention to personal development, critical thinking, self-confidence, and commitment. In these groups there is an implicit acceptance and respect for individual differences, creating an atmosphere of cooperation, rather than competitiveness. Finally, in the constructivist approach, greater importance is given to the role of the student, making him responsible for his own learning. Cooperative Learning presents a marked contrast with respect to traditional classroom methods, what makes students increase their concentration, their motivation and their performance.

Social interaction and learning

Learning can be defined as the acquisition of information and knowledge, skills and habits, attitudes and beliefs. Learning experiences always involve a change in one of these areas. In psychology learning is described as all the changes in behaviour resulting from experience that are relatively permanent and not only as the result of maturity or growth or of temporary effects of variables such as fatigue or drugs (Lefrançois, 1997: 109).

The idea of learning is most times associated with the individual effort for learning and the memory. Learning in the classroom is analysed as an individual process of every separate student. Apparently, every student is the only responsible person for what s/he learns in the classroom (Michaels, 1985; Lemke quoted in Cazden, 1988: 166). Although students may be together in class this is just a physical relationship; they are given a recess period where they can socialise in a better way but this has nothing to do with the learning that occurs in the classroom, where they must stay silent and listen to what the teacher says to them.

Cirigliano and Villaverde (1994: 24-25) state this way how human beings acquire knowledge:

- a) la sociedad debe transmitir su patrimonio cultural o sea el conjunto de contenidos que estima valiosos;
- b) ese conjunto es reducido previamente a ideas o conocimientos;
- c) éstos se han depositado en algún sitio: los libros;
- d) de los libros pasan a la cabeza del maestro;
- e) y de ésta al depósito de conocimientos en la cabeza del alumno, es decir, la memoria (que tiene la facultad o poder de retener y conservar)

Cirigliano and Villaverde (1994) point at the basic principles of learning conceived this way. Cognitive development is a process through which culture is obtained: the ideas to be learnt are in books; the teacher and the student's memory are responsible for the regulation of this process.

However, the concept of learning can be seen under a different perspective. Quoting Cirigliano and Villaverde (1994: 25): '... para un hombre concebido como organismo inteligente en acción con su medio... Aprender será resolver activamente problemas vitales y no simple acumulación de datos en la memoria'.

Two points in this notion of human learning must be stressed. In the first place, man as an intelligent being (*organismo inteligente*), that is, different from the rest of the members of the animal world because of his intelligence. In the second place, the prospect of man as an organism that acts in a specific environment, which in the case of human beings, is the social milieu, that is, the interactions that he establishes with his surroundings.

Understanding learning as a social process leads us to Vygotsky's works. Vygotsky states that social and individual elements come to interact in the learning process. People build up their own knowledge within a given social and cultural frame, which goes beyond the boundaries of the individual. The social environment is not considered just as an influence, but as the source of the child's knowledge. The child gets to internalise and transform social relations as well as the cultural instruments established among people and between the

people and their physical world. The participation in sociocultural contexts provides them with the necessary instruments and, in particular, with an ability to use them (Newman, Griffin and Cole, 1991: 76)

The approach developed by Vygotsky is called Sociocultural Theory. As its name suggests, its main objective is the discovery of the effects that social and cultural changes of society have on the mental processes of the individual. The underlying idea is that the human being is subject to cultural processes more than natural ones. The fact of having different social experiences not only provides a different knowledge but also stimulates the development of different types of mental processes.

Vygotsky's works reject the idea of considering conscience as a result of an internal development and he suggests understanding it as a result of the social relationship with others and as 'contacto social con uno mismo'. (Rivière, 1987: 129). This approach totally coincides with present trends in modern psychology. Quoting Homans: 'La psicología moderna sostiene que la conciencia, representante de las normas del grupo en el individuo, no es innata sino inculcada en el individuo, como parte del proceso de la educación social.' (Homans quoted in Cirigliano and Villaverde, 1994:72). Cirigliano and Villaverde (1994) go on to point out that this social education is not attained within society -understood as a general and abstract concept- but in the small groups that make up society, where individuals can interact everyday in a more real, particular way. These authors also maintain that a feasible social education depends on the opportunities we are given to take part in groups, and also the characteristics of these groups. Social learning starts in the heart of the family, continues in small groups in which different links are established, such as friends, school, games, leisure, work, etc. (Cirigliano and Villaverde, 1994:72).

Vygotsky's ideas complement K. Lewin's (founder of modern social psychology), and Piaget's. Lewin emphasises the fact that behaviour cannot be understood exclusively in terms of personality. What a person says or does, does not only result from what is going on inside him. According to Lewin, in order to understand behaviour, it is essential to bear in mind the social, organisational, and even the physical context that may affect the individual. Lewin attaches great importance to the interaction between people and their own environment as a key to understanding human behaviour (Sharan, 1992: 7).

Working within a Vygotskian framework, it can be said that learning awakens a number of internal evolutionary processes that can operate only when the individual is interacting with people from his/her environment or in cooperation with a peer. Learning which is culturally organised turns into mental development, making evolutionary processes work. Learning is a universal and necessary aspect of psychological functions.

The diversity of human learning

From a traditional perspective, learning is seen as the acquisition of a series of adequate answers to the questions asked by the teacher or which are in books and that the student learns by means of a virtually mechanical process. Positive or negative incentives are mostly external and set by marks. If these are good, they will motivate the student to go ahead learning. If they are negative, they can make him/her feel weak, or even make him/her not try again. Students as a whole are considered as passive recipients of these incentives (since they are external to them) and of the acquisition of correct answers (since they are also external to them).

From this point of view, learning means that the student must reproduce without any changes the information given. The problem with this idea of learning lies in the fact, according to scholars such as Mauri (1999), that this idea of learning as a copy does not take into consideration the students' characteristics or the processes they undertake in order to learn. Learning conceived this way generalises people, looking for what is common and predictable and ignoring those aspects which are private, individual and totally human (Mauri, 1999: 67-71)

Quoting Zabala's words:

Desde el siglo XVI el trabajo en gran grupo ha sido la forma más habitual de organizar la clase en las escuelas graduadas. Esta forma de agrupamiento del alumnado obedece a una concepción según la cual los alumnos y alumnas de una misma edad son fundamentalmente iguales, aprenden del mismo modo y en el mismo tiempo. El profesor actúa ante el grupo como si éste fuera un todo homogéneo, el discurso es generalmente unidireccional y la forma de enseñanza / aprendizaje se corresponde con un esquema que consiste en exposición, memorización de lo expuesto, verbalización de lo memorizado mediante una prueba oral o escrita y sanción sobre el resultado (Zabala, 1999: 154)

However, reality is different: when the student faces up a learning task, he does so with a number of capacities, with a memory and intelligence quotient and a specific working capacity. These enable him to achieve a determined comprehension and execution level of the task. Together with these cognitive qualities, there are other equally important, personal qualities: previous learning experiences, capacity to take risks and make an effort, ability to ask for, provide

and receive any help, and a positive attitude towards interpersonal relations. These qualities are unique to every student.

From a humanistic point of view (Rogers and Freiberg, 1994; Maslow, 1970; Bartolome, 1994; Patterson and Purkey, 1993; Shulman, 1986 quoted in Lefrançois, 1997: 314- 324), knowledge is a totally personal representation. Humanistic psychology deals with the unique, the individual and the human side of the self. This trend is based on the premise that, however similar we may seem, we are very different from one another. Our differences represent an essential concept in humanistic psychology: the *self* (Lefrançois, 1997: 314) It is, then, possible for people who have participated in the same learning experience to hold different impressions and feelings, whereas they are absolutely convinced that theirs was the right perception. What is real for an individual may not necessarily be real for another. This is why it is important for the teacher to understand how different the students' perception of the world may be.

According to humanistic beliefs, the individual is the focus of a world of continuously changing experiences. This means, firstly, that the meaningful aspects of the environment are private. Secondly, not only is the individual's world private but also nobody can know it completely. For this reason, if somebody is to be understood, their point of view must be adopted.

The individual aspect of learning, which implies that the student builds a personal construction of cultural contents does not mean that they can act spontaneously in any direction. They can't, for example, when dealing with Spanish spelling, write letter *h* where they wish. The individual meaning of learning forces the student to lead it towards a given direction: that which is shown by social convention. The individual construction of knowledge does not stand in opposition to social interaction. The internal dynamics of individual development takes forms which are dependent on the cultural framework where the person lives (Solé and Coll, 1999: 15).

Besides the idea of the uniqueness of the self, humanistic psychology defends the idea that emotional factors are also involved in the learning process. Knowledge acquisition demands time, effort and personal involvement, as well as professional help, enthusiasm and affection. Failing or succeeding to solve a learning task is crucial to the student's self-opinion (self-concept) and esteem (self-esteem). When we learn, we not only become acquainted with new information, but also develop a concept of our self, a way to perceive and interact with the world (Solé, 1999: 27-28). Intending to learn something and managing to do so, is always a positive experience. It helps the individual construct a positive image of himself/herself, increasing his/her self-esteem. This way one gets the necessary motivation to face whatever challenges may come with more self-confidence. According to Atkinson's theory, the student's performance depends on three variants: motivation, expectations (what the

student believes his/her teachers think of him/her) and incentives. Atkinson considers performance as the result of two opposed but complementary trends: being successful and avoiding failure (Johnson, 1972: 111-112).

Regarding motivation, Atkinson argues that the most useful means to motivate students consists in enhancing the chances for the student to have a successful outcome. There are different ways to do this as, for example, divide the task in smaller units that the student can handle more easily or provide the help and assistance that the student needs to complete the task successfully. The knowledge of Atkinson's motivation theory helps the teacher see the learning needs of students and plan an alternative programme in case it were necessary (Johnson, 1972: 116-117).

This way, humanistic theorists such as Rogers and Maslow are in favour of learning which provides successful rather than failure experiences: '...if we are genuine, caring, empathic and congruent as teachers, parents or counselors, we will be fostering the growth and learning capacity of others' (Rogers and Freiberg, 1994 quoted in Lefrançois, 1997: 323).

In the second place, regarding the student's expectations, the teacher's role is crucial, since it can act as a filter between learning and the student, creating success or failure expectations. These expectations form the idea that teachers have about their students, what they think and expect of them, what they believe their students are able to do. Coll and Miras (1990) highlight that these expectations that teachers hold about their students can sometimes modify the students' performance, that is, if a teacher thinks a student is able to perform a task satisfactorily, this student will have more chances to succeed than another one who is considered unable to carry out a given task.

Finally, the third point of Atkinson's theory studies the role of incentives. Deutsch (1949) argues that there are three kinds of incentives: individual, competitive and cooperative. In a competitive goal structure, students compete to get good results, the praise of the teacher or any other kind of reward. In an individualistic goal structure, students get a mark if they get to a given level. A cooperative goal structure is based on the average mark of all students in the team.

Just as one can't understand human development without culture, one can't understand it without paying attention to the diverse educational practices through which students make a personal interpretation of culture. Schooling should promote the student's mental activity, being responsible for the fact that the student becomes a unique and unrepeatable person in a given social context.

The constructivist view of learning

Traditionally, the student's mind has been considered as a clean board (*tabula rasa*) where contents and concepts must be written. The student's role has been to accept this knowledge in a passive manner (Miras, 1999: 47). As Cirigliano and Villaverde (1994) put it:

En la concepción tradicional lo que está en los libros es mucho más importante que lo que el alumno pueda descubrir. Lo que debe descubrirse, lo importante, lo verdadero ya ha sido hallado de modo definitivo; por eso, precisamente, está en el libro. Lo que corresponde al estudiante es inclinarse y recibir todo aquello que otros mucho más inteligentes que él han descubierto para siempre. A él le corresponde aprenderlo y repetirlo. Los alumnos han de tener una forzosa actitud pasiva de recibir, porque lo importante en la actividad escolar es lo que el maestro tiene que dar y no lo que los alumnos tengan que aportar (Cirigliano and Villaverde, 1994: 26-27)

From this perspective, the teacher must develop his/her skills and is the one who really learns: chooses relevant information, summarises it, prepares it to be put forward orally, explains it, answers questions, and so on. What is more, the teacher sets the objectives, organises, controls, keeps discipline problems at bay, that is, s/he performs all the functions. Historically, classroom research has been focused on the teacher's behaviour. The general opinion in the 60s and 70s was that teachers had to put into practice all kinds of techniques to keep students alert, interested and involved in academic work (Hertz-Lazarowitz, 1995: 71).

The student's mind is far from being a clean board. Students start learning long before they come to school. This distinction between the knowledge the student brings to class and the knowledge s/he learns at school brings about the creation of two parallel worlds: school and life. Each of them rotates on a different axis, because the student learns things for the classroom that s/he can't use in real life and what they learn outside of school is useless for the classroom. In the classroom the student learns for the classroom (Cirigliano and Villaverde, 1994: 34).

Another characteristic of this view of learning is that the student is not the director of his/her own learning: s/he does not know where s/he is going, what they will be taught tomorrow or what s/he is being taught today. They do not know the purpose of a task and do not relate it with the understanding of the task meaning or their own needs. Thus, they do not go into learning in any depths.

As a contrast, from J. Dewey's constructivist point of view, school learning is a process in which the student holds an active role when they construct, change or contrast previous knowledge. This knowledge that the student possesses is not an obstacle in the learning process. It is, on the contrary, an essential requirement. It is *through* their previous knowledge that the students learn. Quoting Ausubel, Novak and Hanesian (1983): 'El factor más importante que influye en el aprendizaje es lo que el alumno ya sabe. Averíguese esto y enséñesele en consecuencia.' (Ausubel, Novak and Hanesian quoted in Miras, 1999:54). So, it is not a question of suppressing previous knowledge, but instead, of using, reviewing and progressively enriching that knowledge. From a constructivist perspective, the learning process does not consist of accumulating new knowledge, but of integrating, modifying, relating, and coordinating already existing schemes of knowledge.

The relation between new and previous knowledge brings together both our society and the classroom, allowing them to interact and complement each other. Likewise, previous knowledge recovery and update is essential for meaningful learning. The more complex the inter-relations between the meanings become, the more opportunities there will be for them to use them in new contexts (Miras, 1999: 57). It is only when the students use the newly acquired knowledge, that we can be certain about success in the learning process. How often they use these new concepts becomes a fundamental criterion in the design of new instruments to inform about the range and complexity of those built meanings.

A second aspect to take into account from the constructivist point of view is how familiar an individual may become with his/her own mental processes, which allows for a better activity control. In the learning process, the students not only change the amount of information they may already have, but also their personal learning abilities. It is important to teach them how to learn and show them how to organise the incoming information for a later use. Students need a series of meta-cognitive skills to ensure their personal control over their knowledge and over their own learning processes. (Mauri, 1999: 71).

Regarding the development of learning strategies, it can be said that human beings are processors of information, which comes to us through our sensory receptive organs. The techniques used to manipulate the incoming information and, later, to retrieve the information that has been stored are called strategies. This process is carried out in an unconscious, automatic way. Nevertheless, it is necessary to be conscious of the technique used so that it becomes automatic. Rubin points out that there are three kinds of strategies: learning strategies, communication strategies and social strategies (Rubin quoted in Wenden and Rubin, 1987: 23).

Wenden and Rubin (1987) state that the use of the previously mentioned techniques, focused on the autonomy of the learner, is necessarily linked to a change in mentality about the sense of the word 'learning'. These authors go on to say that in our society, education as conveyor of knowledge is no longer an adequate view. Instead of having a passive student, recipient of the knowledge that comes from the teacher, the learner must move into action. For instance, the solving of problematic situations is a very positive task for learning since it allows the student to have an active participation. Nevertheless, Wenden and Rubin (1987) clarify that learners must feel free to decide if they prefer to be autonomous or led by another person.

When the learner is in control of their activity, they establish connections, generalise meanings and become more autonomous. The learner understands what they are doing and why, that is, they are conscious of the process they are following; this fact allows them to see their difficulties and, if necessary, ask for help. This also allows them to experience what is being learnt, which motivates them to go ahead with the effort learning involves (Solé, 1999; Zabala, 1999: 151).

Students will tend to be autonomous and involved in learning tasks as long as they can make reasoned decisions about the planning of their work, can be responsible for it, know the criteria used to value their performances and can regulate them.

The expression of learning dimensions in the classroom: cooperative learning

On previous sections, emphasis has been placed on three basic aspects of the learning process: its social origin, its individual nature (linked to the emotional factors that influence its development), and finally, the active construction of knowledge, and the thereby entailed development of an intellectual independence and autonomy. These three elements cannot be considered separately, but as different sides of the same learning process. When we learn something, we take our culture's contents, build up our personal interpretation and assimilate the new knowledge to our previous knowledge on the matter. It is all done together. In this sense, the so-called Cooperative Learning approach provides a valid framework for these three dimensions.

Cooperative Learning is defined as: '... a body of literature and research that has examined the effects of co-operation in education. It offers ways to organise group work and to enhance learning and increase academic achievement' (Olsen and Kagan, 1992: 1). True cooperative academic experiences are those in which students work together 'in a group small enough so that everyone can participate on a collective task that has been clearly

assigned... [and where] students are expected to carry out their task without direct and immediate supervision of the teacher' (Cohen, 1994: 1).

What we know as Cooperative Learning is related to group work or team work. On the one hand, traditional methodology used to consider group work as a chaotic and disorganised element. It should, therefore, be avoided. No specific function was found for group work, apart from changing the lesson dynamics. It was also used to cover contents the teacher did not consider relevant enough. In many cases, group work was the sum of individual efforts or, in some occasions, the result of the effort of only two or three members of the group, where the rest of the members were not involved.

On the other hand, group work often meant a little break for the teacher and a pastime for students. The fact that teachers were not specifically trained in group dynamics techniques resulted in a lack of control as regards group performance.

Hence, the term Cooperative Learning goes beyond group work as a little break for the teacher and a pastime for students. Lesson planning that encourages cooperative work demands careful planning by the teacher, as well as a different type of involvement and a reflective analysis after the experience.

Cooperative Learning does not consist of placing the students in different groups and expecting them to carry out their task together. Johnson and Johnson (1999) state that for the students to work in a truly cooperative way, the educational context must comply with a series of conditions. Firstly, classroom distribution must enable face-to-face interaction. When it is not possible to modify the arrangement of tables and chairs, students can be asked to work with their closest classmate. An ideal situation places all members of the group where they can see each other, allows the teacher to approach any student. All students must be able to see the blackboard from their seats and move around the classroom easily.

Secondly, a group task must be assigned, that is, a specific aim the different students must achieve together as a group. The purpose is not only doing things together, but facing and solving a common task or question and, as a result, learning something together. A cooperative setting will not work properly, if students just speak or exchange ideas, or even if they happen to help each other at a given moment, when in the end they can carry out their task without the contribution of the rest of the group. This inter-relation is called Positive Interdependence.

Thirdly, Johnson and Johnson (1999) maintain that solving common tasks or problems requires the contribution of each of the participants. The teacher must try to avoid that only some students solve the proposed task, as well as only some of them getting involved in the learning process. This is known as individual accountability. Each member of the group must feel that they are contributing to the group's success with their participation and learning.

Finally, sufficient resources must be available for correct development of the activity and making progress, both as regards the members' interpersonal relations and task completion (Johnson and Johnson, 1999). With this purpose, dictionaries, grammar references, etc., should be at hand and students can be asked to bring their own material from home, such as old games, books, etc. This material can be part of the classroom resources.

Cooperative Learning constitutes a useful approach to articulate the three elements studied here: in the first place, learning is a social process that depends on the interaction with others. It relies on the interactions with those who are better informed. Cooperative Learning promotes interactions with all participants providing the development of cognitive and personal growth, interpersonal relationships and performance in social groups different from their own (Onrubia, 1999: 121).

Interactive situations which occur in cooperative situations offer participants the chance to explain their point of view and communicate it in an understandable manner and to be in the position of explaining, give instructions or help others to perform a common task. The fact of having to present to others one's point of view gives language a crucial role as organiser and regulator of cognitive processes. Speech is the essential instrument through which participants can contrast and modify their schemes of knowledge and their representations about what is being taught and learnt.

The second aspect hereby analysed emphasises the individual nature of learning and takes into account the emotional factors that take part in the process. Cooperative Learning techniques acknowledge the existence of individual differences and accept them as valid. And what is more: they take advantage of them. Apart from assimilating a certain amount of information, each student is able to learn by contrasting and comparing what they assimilated with what their classmates did. The group system allows the students to discover their strengths and weaknesses. They observe their own behaviour in the light of their partners' behaviour, modifying their attitudes and strategies as they verify that there are as many alternatives as members in the group.

This way, in a cooperative framework, the students are given the chance to know each other and overcome possible misunderstandings and stereotypes, often held against people that are different from themselves.

As regards motivation and incentives, the fact that their results will depend on someone else's behaviour is very encouraging. Students are more likely to get involved and behave in such a way that their group is rewarded. When the groups communicate something to the rest of the class, the students find a better support and they feel more confident, because their answer is not only theirs, but the group's. Students may also encourage each other. They may feel that they are not studying for themselves, but for the group's sake.

The third and last aspect is based on the active role of the student in the learning construction. This is specially relevant in Cooperative Learning techniques. Co-operative work provides the students with more opportunities to use new concepts and terms, as compared with teacher-centred classes.

Cooperative Learning techniques are aimed at the independence of the student from authority, helping him/her develop his/her own intellectual independence and maturity by interacting with his/her peers. This enables them to observe both the point of view of an expert on the subject and the various contexts from which their peers regard the issue.

As a conclusion, learning in groups helps the students share their knowledge and their lack of knowledge with their peers. It makes them have a more flexible attitude towards the different roles they will need to learn in their own lives' learning process.

As a summary, we would like to point out that Cooperative Learning is a valid means to achieve socialisation for the students, who become more aware of the opinions of others and benefit from those different perspectives. Likewise, they learn to negotiate and, where necessary, to give up their own interests in favour of the group objective. Setting up these collaboration strategies, and the role/task distribution characteristic of Cooperative Learning, provides them with the opportunity to socialise and establish constructive relationships in a real context, essential to obtain good results or accomplish certain objectives.

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